

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for using a three-dimensional (3D) photonic quantum ring (PQR) laser as for a low power consumption display, wherein the PQR laser has a sufficient small radius to adjust an inter-mode spacing (IMS) of oscillation modes discretely multi-wavelength-oscillating in an envelope wavelength range within the gain profile of a given semiconductor material of the PQR laser so that the IMS has a maximal value comprising the step of:

adjusting a radius of the PQR laser to increase an inter-mode spacing (IMS) of oscillation modes discretely oscillating at multiple wavelengths in a wavelength range within a gain profile of a given semiconductor material of the PQR laser, thereby reducing a power consumption of the PQR laser.

2. (Currently amended) The method of 3D-PQR laser according to claim 1, wherein increasing the IMS the adjustment of the IMS to the maximal value causes the number of the oscillation modes oscillating in the envelope to be decreased adjusted to a minimal value.

3. (Currently amended) The method of 3D-PQR laser according to claim 2, wherein the radius of the PQR laser is in a range of 15 μ m to 2 μ m depending on the structure and shape of the PQR laser and the semiconductor material.

4. (Currently amended) The method of 3D-PQR laser according to claim 1, wherein the radius of the PQR laser is about 3 μ m.

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5. (Currently amended) The method of 3D PQR laser according to claim 3, wherein the number of the oscillation modes of the PQR laser ~~is~~ has a value of 1.

6. (Currently amended) The method of 3D PQR laser according to claim 4, wherein the number of the oscillation modes of the PQR laser has a value of 1.

7. (Canceled)

8. (Canceled)

9. (Currently amended) A method for using a three-dimensional (3D) photonic quantum ring (PQR) laser as for a low power consumption display, wherein the PQR laser has a sufficient small radius to adjust that the number of oscillation modes discretely multi-wavelength-oscillating in an envelope wavelength range within the gain profile of a given semiconductor material of the PQR laser has a value of 1 comprising the step of:

adjusting a radius of the PQR laser to decrease the number of oscillation modes discretely oscillating at multiple wavelengths in a wavelength range within a gain profile of a given semiconductor material of the PQR laser, thereby reducing a power consuming of the PQR laser, wherein the number of the oscillation modes has a value of 1.

10. (Currently amended) The method of 3D PQR laser according to claim 9, wherein the radius of the PQR laser is in a range of $15\mu\text{m}$ to $2\mu\text{m}$ depending on the structure and shape of the PQR laser and the semiconductor material.

11. (Currently amended) The method of 3D PQR laser according to claim 9, wherein the radius of the PQR laser is about $3\mu\text{m}$.

12. (Canceled)

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13. (Canceled)